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10/582,107	06/08/2006	Nobuhiko Tsuda	Q9-4915	1637
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EXAMINER				
BUJE, NICOLE M				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/582,107

**Applicant(s)**

TSUDA ET AL.

**Examiner**

NICOLE M. BUIE

**Art Unit**

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☒ Claim(s) 1-15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SE/US)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Objections***

**Claims 1-15** are objected to because of the following informalities: claim 1 recites the limitation “dispersion which comprises a particle comprising a fluoropolymer” renders the claims awkward. Appropriate correction is required.

**Claims 14 and 15** are objected to because of the following informalities: claims 14 and 15 recite “molding/processing”. It is unclear whether both molding and processing are required, or either molding or processing is required. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1, 4, and 5** are rejected under 35 U.S.C. 102(b) as being anticipated by Hirono et al. (JP 06-065337, see machine translation for citation).

**Regarding claims 1, 4 and 5**, Hirono et al. discloses a fluoropolymer aqueous dispersion which comprises a particle comprising a fluoropolymer dispersed in an aqueous medium in the presence of a non-ionic surfactant [0007]. Hirono et al. further discloses an aqueous dispersion with no added anionic surfactant (Examples 1-4, Table 1).

The Office realizes that all of the claimed effects or physical properties are not positively stated by the reference(s). However, the reference(s) teaches all of the claimed ingredients.

Therefore, the claimed effects and physical properties, i.e. wherein a supernatant for assaying as obtained by subjecting said fluoropolymer aqueous dispersion to 30 minutes of centrifugation at 25°C and at a gravitational acceleration of 1677G, when subjected to high-performance liquid chromatography [HPLC] under the conditions of a flow rate of 1.0 ml/minute and a column temperature of 40°C using an acetonitrile/0.05 M aqueous solution of phosphoric acid (60/40% by volume) mixture as a developing solution, followed by detection at an absorption wavelength at which said nonionic surfactant would implicitly be achieved by a composition with all the claimed ingredients. If it is the applicant's position that this would not be the case: (1) evidence would need to be provided to support the applicant's position; and (2) it would be the Office's position that the application contains inadequate disclosure that there is no teaching as to how to obtain the claimed properties with only the claimed ingredients.

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**Claims 2, 6, and 8** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirono et al. (JP 06-065337, see machine translation for citation) as applied to claim 1 above.

**Regarding claim 2**, Hirono et al. discloses a fluoropolymer aqueous dispersion as shown above in claim 1 above. Hirono et al. further discloses the fluoropolymer aqueous dispersion wherein the nonionic surfactant amounts to 1 to 5% by mass relative to the fluoropolymer solid matter in said fluoropolymer aqueous dispersion [0039].

However, Hirono et al. does not disclose said surfactant amount being from 5 to 1% by mass relative to the fluoropolymer solid matter, it is noted that the specific amount of nonionic surfactant is not considered to confer patentability to the claims. As the stability of the fluoropolymer aqueous dispersion is variable that can be modified by adjusting said amount of nonionic surfactant, the precise amount of nonionic surfactant would have been considered a result effective variable by one having ordinary skill in the art at the time the invention was made. As such, without showing unexpected results, the claimed amount of nonionic surfactant cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, amount of ionic surfactant, and the motivation to do so would have been, to obtain desired stability of the fluoropolymer aqueous dispersion (*In re Boesch*, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (*In re Aller*, 105 USPQ 223).

**Regarding claim 6**, Hirono et al. discloses a fluoropolymer aqueous dispersion as shown above in claim 1 above. Hirono et al. further discloses the fluoropolymer aqueous dispersion wherein the fluoropolymer is a tetrafluoroethylene polymer ([0050], Ex. 4 from Table 1 [0052]).

**Regarding claim 8**, Hirono et al. discloses a fluoropolymer aqueous dispersion as shown above in claim 1 above. Hirono et al. does disclose that weatherability of a paint film is affected by the amount of fluoro-olefin which is polymerized ([0034],[0035]).

However, Hirono et al. does not disclose the fluoropolymer aqueous dispersion wherein the fluoropolymer solid matter content is 20 to 80% by mass relative to said fluoropolymer aqueous dispersion. As the weatherability of the paint film is variable that can be modified by adjusting said amount of the fluoropolymer solid matter content as taught by Hirono et al. [0034], the precise amount of the fluoropolymer solid matter content would have been considered a result effective variable by one having ordinary skill in the art at the time the invention was made. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the amount of the fluoropolymer solid matter content, and the motivation to do so would have been, to obtain desired weatherability of the paint film (*In re Boesch*, 617 F .2d. 272,205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (*In re Aller*, 105 USPQ 223).

**Claims 9 and 10** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirono et al. (JP 06-065337, see machine translation for citation) as applied to claim 1 above.

**Regarding claim 9**, Hirono et al. discloses an aqueous dispersion as shown above in claim 1. Hirono et al. further discloses a method of producing the fluoropolymer dispersion which comprises a pretreatment fluoropolymer aqueous dispersion containing a nonionic surfactant (A), wherein nonionic surfactant (A) has an HLB of 12 to 14 ([0007], Table 1).

However, Hirono et al. does not disclose adding a nonionic surfactant (B) to pretreatment fluoropolymer dispersion. Hirono et al. further discloses various nonionic surfactants, wherein nonionic surfactant (B) has an HLB of 13 to 15 which can also be used in disclosed method ([0052], Table1). Since both nonionic surfactants are taught by Hirono et al. ([0052] Table 1) to be used in the same disclosed method for the same purpose, it would have been obvious to one having ordinary skill in the art at the time of the invention to use a combination of them, see *In re Kerkhoven*, 205 USPQ 1069, 1072 (CCPA 1980). i.e., it is well settled that is a *prima facie* obvious to combine two ingredients each of which is taught by the prior art to useful for the same purpose.

**Regarding claim 10**, Hirono et al. discloses the method of producing the fluoropolymer aqueous dispersion wherein an electrolyte is further added to the pretreatment fluoropolymer aqueous dispersion ([042],[0050]).

**Claim 11** is rejected under 35 U.S.C. 103(a) as being unpatentable over Hirono et al. (JP 06-065337, see machine translation for citation) as applied to claim 9 above in view of Hoshikawa et al. (JP 2003268034, see the English Equivalent US 7141620).

**Regarding claim 11**, Hirono et al. discloses a method as shown above in claim 9.

However, Hirono et al. does not disclose the method wherein the pretreatment fluoropolymer aqueous dispersion is obtained by carrying out a concentration operation at least twice. Hoshikawa et al. teaches the pretreatment fluoropolymer dispersion is obtained by carrying out a concentration operation at least twice (C4/L47-C5/L27). Hirono et al. and Hoshikawa et al. are analogous art concerned with the same field of endeavor, namely aqueous fluoropolymer compositions comprising nonionic surfactants. It would have been obvious to one of ordinary skill in the art at the time the invention was made to pretreat the fluoropolymer aqueous dispersion obtained by carrying out a concentration operation at least twice as taught by Hoshikawa et al. in the process of Hirono et al., and the motivation to do so would have been as Hirono et al. suggests, to readably mix the nonionic surfactant in the dispersion.

**Claim 12** is rejected under 35 U.S.C. 103(a) as being unpatentable over Hirono et al. (JP 06-065337, see machine translation for citation) as applied to claim 9 above in view of Hoshikawa et al. (US 6498207).

**Regarding claim 12**, Hirono et al. discloses a method of producing a fluoropolymer aqueous dispersion as shown above in claim 11.

However, Hirono et al. does not disclose the method of producing the fluoropolymer aqueous dispersion wherein the fluorine-containing anionic surfactant is the one to be present in carrying out a polymerization in the aqueous medium for obtaining the fluoropolymer and/or the one added after carrying out a concentration operation following the polymerization. Hoshikawa et al. (US '207) teaches a polytetrafluoroethylene aqueous dispersion composition (Abstract, C1/L6-9). Hoshikawa et al. (US '207) further teaches that fluorine type anionic surfactants, may



be added, as the case requires (C7/L21-27), such as stabilizing the fluoropolymer aqueous dispersion. Therefore, it would have been obvious to one of ordinary skill at the time the invention was made to incorporate the fluorine-containing anionic surfactant of Hoshikawa et al. (US '207) in the process of modified Hirono et al. Said combination would amount to use of known element for its intended use in a known environment to accomplish entirely expected results, with reasonable expectation of success.

**Claims 1, 3, 7, and 13-15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Doughty, Jr. et al. (US 3,855,191) in view of Hirono et al. (JP 06-065337, see machine translation for citation). *This is an alternative rejection of claim(s) 1 above to meet the limitations of electrolyte.*

**Regarding claim 1**, Doughty, Jr. et al. discloses a fluoropolymer aqueous dispersion which comprises a fluoropolymer (Abstract,

However, Doughty, Jr. et al. does not disclose a nonionic surfactant. Doughty, Jr. et al. and Hirono et al. are analogous art concerned with the same field of endeavor, namely aqueous fluoropolymer compositions. It would have been obvious to one of ordinary skill in the art at the time of invention to use a nonionic surfactant of Hirono et al. in an aqueous dispersion of Doughty, Jr. et al., and the motivation to do so would have been as Hirono et al. suggests improving the stability of the aqueous dispersion [0038].

The Office realizes that all of the claimed effects or physical properties are not positively stated by the reference(s). However, the reference(s) teaches all of the claimed ingredients. Therefore, the claimed effects and physical properties, i.e. wherein a supernatant for assaying as

obtained by subjecting said fluoropolymer aqueous dispersion to 30 minutes of centrifugation at 25°C and at a gravitational acceleration of 1677G, when subjected to high-performance liquid chromatography [HPLC] under the conditions of a flow rate of 1.0 ml/minute and a column temperature of 40°C using an acetonitrile/0.05 M aqueous solution of phosphoric acid (60/40% by volume) mixture as a developing solution, followed by detection at an absorption wavelength at which said nonionic surfactant would implicitly be achieved by a composition with all the claimed ingredients. If it is the applicant's position that this would not be the case: (1) evidence would need to be provided to support the applicant's position; and (2) it would be the Office's position that the application contains inadequate disclosure that there is no teaching as to how to obtain the claimed properties with only the claimed ingredients.

**Regarding claim 3**, Doughty, Jr. et al. discloses the fluoropolymer aqueous dispersion wherein an electrolyte is incorporated ("ammonium carbonate", C8/L57-62).

However, Doughty, Jr. et al. does not disclose the specific electrolyte concentration of the said claim. As the stability of the aqueous dispersion is variable that can be modified by adjusting said amount of electrolyte as taught by Hirono et al. ([0042],[0048]), the precise amount of electrolyte would have been considered a result effective variable by one having ordinary skill in the art at the time the invention was made. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, amount of electrolyte, and the motivation to do so would have been to obtain desired stability of the aqueous dispersion (*In re Boesch*, 617 F .2d. 272,205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art,

discovering the optimum or workable ranges involves only routine skill in the art. (*In re Aller*, 105 USPQ 223).

**Regarding claim 7**, Doughty, Jr. et al. discloses the fluoropolymer aqueous dispersion wherein the fluoropolymer is a tetrafluoroethylene polymer, which is a perfluoropolymer (Abstract, C1/L6-8).

**Regarding claim 13**, Doughty, Jr. et al. discloses a fluoropolymer powder which is obtained by drying a wet powder obtained from a fluoropolymer aqueous dispersion (C5/L26-31).

**Regarding claim 14**, Doughty, Jr. et al. discloses a fluoropolymer molding which is obtained by molding the fluoropolymer aqueous dispersion (C5/L26-42).

**Regarding claim 15**, Doughty, Jr. et al. discloses a fluoropolymer molding which is obtained by molding the fluoropolymer powder (C5/L26-42).

### ***Response to Arguments***

Applicant's arguments filed 06/18/2008 have been fully considered, and they substantially persuasive. The following comments apply:

A) Applicant's argument that with respect to stability, the effect of the present invention is attributable to a viscosity-temperature dependency reduction (P3) is not persuasive. The viscosity-temperature dependency reduction is dependent on the supernatant separated from the fluoropolymer. Therefore, the viscosity-temperature dependency reduction shown is not based on a fluoropolymer aqueous dispersion.

B) Applicant's argument that although JP'337 discloses the content and HLB of nonionic surfactant, JP '337 does not disclose, teach or suggest the ratio of (A1/A0) nor recognize its advantageous effects (P4) is not persuasive. The ratio of (A1/A0) is dependent on the supernatant separated from the fluoropolymer. Therefore, the said ratio is not based on a fluoropolymer aqueous dispersion. Due to the realization of this fact by the Examiner, the result effective variable statements of the content of nonionic surfactant have been retracted.

C) Applicant's argument that JP '337 broadly discloses HLB, but does not disclose the addition of a nonionic surfactant (B) to a pretreatment fluoropolymer aqueous dispersion having the claimed content of the fluorine-containing anionic surfactant (P4) is not persuasive. The motivation to add an additional surfactant is shown above in claim 9.

D) Applicant's argument that Hoshikawa (JP'034) fails to remedy the deficiencies of JP'337 is not persuasive. Furthermore, applicant's argument that in JP'034, surfactant (a) was added after concentration of dispersions containing surfactants (a)-(c) (P5) in the working Examples is not persuasive. In claim 12, the method of producing the fluoropolymer aqueous dispersion has the fluorine-containing anionic surfactant added after carrying out a concentration operation following the polymerization. Therefore, the limitations regarding the addition of anionic surfactant is disclosed as shown above in claim 12.

E) Applicant's argument that Doughty, Jr., does not disclose nonionic surfactants and JP '337 does not disclose the ratio of A1/A0 is not persuasive. The response to said ratio is shown above in B). Additionally, in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the

rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

F) Applicant's argument that based on the data in the present specification, it can be seen that the present invention provides unexpectedly superior results (P5) is not persuasive. In the instant specification, it was shown that the nonionic surfactants (B) used in Examples 3 and 4 are higher in HLB than the nonionic surfactant (b) used in Comparative Example 2, and that led to the decrease in viscosity-temperature dependence. However, in JP '337, Hirono et al. shows nonionic surfactants with higher HLB as recited in the instant claims (Table 1). Therefore, the invention of Hirono et al. would exhibit the same results as the instant specification, absent objective evidence to the contrary.

G) In consideration of new interpretation of the prior of Doughty, Jr. et al. in view of Hirono et al., a new ground of rejection has been made.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NICOLE M. BUIE whose telephone number is (571)270-3879. The examiner can normally be reached on Monday-Thursday with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571)272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Eashoo, Ph.D./  
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9/22/2008